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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/708,258	02/20/2004	Toru Tamagawa	072160	2257

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EXAMINER	
FRANTZ, JESSICA L	

ART UNIT	PAPER NUMBER
3746	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/708,258	TAMAGAWA ET AL.	
	Examiner	Art Unit	
	Jessica L. Frantz	3746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 September 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *5-11,23-34,40-45,52-60 and 64-87* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *64-87* is/are allowed.

6)☒ Claim(s) *5-11 and 23-34* is/are rejected.

7)☒ Claim(s) *41-45 and 52-60* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *4/30/2007* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This Action is in response to the Amendments received 9/7/2007.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 5 recites the following limitations for which there is insufficient antecedent basis:

a. "the impeller lower end" on line 9 of the claim

b. "the impeller upper end" on lines 15-16 of the claim

c. "outside" on line 17 of the claim

4. Claim 40 recites the following limitations for which there is insufficient antecedent basis:

d. "the impeller lower end" on line 9 of the claim

e. "the impeller upper end" on lines 15-16 of the claim

f. "outside" on line 17 of the claim

5. Claims 5 and 40 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, the phrase "through the opening and towards outside" is unclear. Outside in a relative term and must be supported with appropriate distinguishing limitations such as the outside of something else.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 5-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Angi et al. 4,659,951 in view of Smiley, III 5,570,996. Angi teaches the invention as claimed including a centrifugal fan motor for cooling a device, the fan motor comprising a motor component 10 having a rotary section 14 including shaft 52, a shaft retaining portion being the recess in member 50, and a rotor holder 48 and a rotor magnet 46 and a stationary section 12 including a stator 12 having a core 20 and coil windings 18 and a bearing 56,58 supporting the rotary section rotatably against the stationary section for rotation about a and an impeller 16 connected to the rotary section (see figure 1) the impeller comprising: a rotational force transmission portion (outer circumferential flanged portion of member 50 where it is attached to member 48) provided on the impeller lower end, for receiving driving force from the motor component; a lower end wall portion 50 fixed in association with the rotational force transmission portion, for structuring a wall 50; and an impeller blade unit 16 having plural blades, each of the blades at its lower end being fixed outer-marginally to the upper surface of the lower end wall portion (as clearly shown in figure 1) and each of the blades extending axially to its upper end, the blades together defining an opening (not labeled) at the impeller

upper end and rotation of said impeller blade unit therein generating an airflow streaming along the rotational axis through the opening and towards outside in a radial direction perpendicular to the rotational axis where both sides of the stator are located within the axial span of the bearing as shown in figure 1. Angi further teaches the bearings are sliding fluid dynamic bearings as shown in figure 1 and as discussed in Angi column 2, lines 50-68. Angi fails to teach the following claimed limitation that are taught by Smiley: an impeller blade unit being dimensioned such that given that 2r represents the diameter to the outer circumference of the impeller blade unit and h represents the axial height of the impeller blade unit, the relationships $2r \leq h$. Smiley teaches this ratio of the diameter to the overall height (Smiley refers to it as the width) for the purpose of achieving a high output (Smiley column 3, lines 50-60). While a specific value of the radius or length of impeller is not disclosed, it would have been obvious to one having ordinary skill in the art at the time the invention was made to found a value of r less than or equal to 12.5 mm or less than 5mm and length less than 100 or 70mm for the specific task at hand and its associated working environment or alternatively to be able to be used to cool a larger range of devices because by making the device small, it may physically be located in conjunction with more structures that require cooling, since the claimed values are merely an optimum or workable range. It has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have used the dimensions as recited in Smiley for

the impeller of Angi for the purpose of higher output (Smiley column 3, lines 50-60). Regarding claims 7-8, while features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function, because apparatus claims cover what a device is, not what a device does (Hewlett-Packard Co. v. Bausch & Lomb Inc., 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990)). Thus, if a prior art structure is capable of performing the intended use as recited in the preamble, or elsewhere in a claim, then it meets the claim. Therefore, since the modified invention of Angi in view of Smiley is capable of operating at the recited speeds, it meets the limitations of the claims. Furthermore, in regards to the various relationships requiring the ratio of h/m (where m equals the axial bearing span) to fall within different ranges and the varying total length of the total structure, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have found an appropriate range for the ratio of h/m according to the specific task at hand and the required amount of bearing support needed and also to find an appropriate total length of the structure based on desired output results, since the claimed values are merely an optimum or workable range. It has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

8. Claims 9-11 and 26-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Angi et al. 4,659,951 in view of Smiley, III et al. 5,570,996 and further in view of Pauly 5,741,123. The modified invention of Angi in view of Smiley teaches

the invention substantially as claimed but fails to teach the following claimed limitation as taught by Pauly: the impeller is at least partially made of aluminum for the purpose of providing a high-strength yet light-weight impeller (Pauly column 3, lines 30-37). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have at least partially made the impeller of aluminum for the purpose of providing a high-strength yet light-weight impeller (Pauly column 3, lines 30-37).

9. Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Angi et al. 4,659,951 in view of Smiley, III 5,570,996in view of Pauly 5,741,123 and further in view of Wang 5,988,979. The modified invention of Angi in view of Smiley in view of Pauly teaches the invention substantially as claimed but fails to teach the following claimed limitation as taught by Wang: at the upper end opening 18 of the impeller blade unit 10, the blades at their inside corners are beveled at least partially in an arcuate contour as clearly shown in figure 2 for the purpose of reducing undesirable turbulence and noise during operation as well as creating greater airflow through the inlet of the impeller (see Wang column 3, lines 52-62). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have beveled the upper end of the impeller as taught by Wang for the purpose of reducing undesirable turbulence and noise during operation as well as creating greater airflow through the inlet of the impeller (see Wang column 3, lines 52-62).

10. Claims 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Angi et al. 4,659,951 in view of Smiley, III 5,570,996 in view of Pauly 5,741,123 and further in view of Muszynski 5,814,908. While Angi teaches a rotor holder 48 made of

magnetic material encompassing the rotary section 14 and the rotational force transmission portion (outer circumferential flanged portion of member 50 where it is attached to member 48) is fixed to the rotor holder, the invention of Angi in view of Smiley in view of Pauly fails to teach the following claimed limitation as taught by Muszynski: the rotational force transmission portion 242 encloses and is fixed to the circumferential surface of the rotor holder 222 therefore enclosing at least a part of the periphery of the rotary section for the purpose of transmitting rotational force from the motor rotor to the impeller 100 as clearly shown in figure 2. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have attached the force transmission portion 242 to the circumferential surface of the rotor holder 222 for the purpose of transmitting rotational force from the motor rotor to the impeller 100 as clearly shown in figure 2.

Allowable Subject Matter

11. Claims 64-87 are allowed. Previously, claims 73-78 were withdrawn from consideration. However, they are being rejoined because the properly depend from an allowed claim.

12. Claims 41-45 and 52-60 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Response to Arguments

13. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection as necessitated by Applicant's Amendment.

Conclusion

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jessica L. Frantz whose telephone number is 571-272-5822. The examiner can normally be reached on Monday through Friday 8:30a.m. - 5:00p.m. E.S.T..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Devon Kramer can be reached on 571-272-7118. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jessica Franks

JF

DEVON C. KRAMER
PATENT EXAMINER

11/1/07